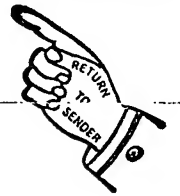
Organization TC1700 Bldg./Room REMSEN

U. S. DEPARTMENT OF COMMERCE
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450
IF UNDELIVERABLE RETURN IN TEN DAYS

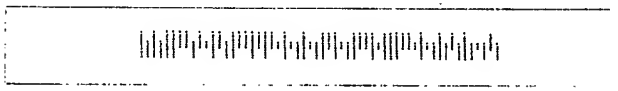
OFFICIAL BUSINESS



AN EQUAL OPPORTUNITY EMPLOYER

Best Available Copy

RECEIVED
JUN 29 2005
USPTO MAIL CENTER



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

24114 7590 06/27/2005

LYONDELL CHEMICAL COMPANY
3801 WEST CHESTER PIKE
NEWTOWN SQUARE, PA 19073

EXAMINER	
RABAGO, ROBERTO	
ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 06/27/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,941	01/26/2004	Sandor Nagy	88-2060A	9300

TITLE OF INVENTION: OLEFIN POLYMERIZATION IN THE PRESENCE OF A DEHYDROGENATION CATALYST

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$1700	09/27/2005

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PTOL-85 (Rev. 12/04) Approved for use through 04/30/2007.

Notice of Allowability	Application No. 10/764,941	Applicant(s) NAGY, SANDOR	
	Examiner Roberto Rábago	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are *1 and 3-19*.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 4/26/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jonathan Schuchardt on 6/20/2005.

In the claims:

Cancel claims 2, 20 and 21.

Replace claims 1 and 3 with the following amended versions:

1. (currently amended) A process which comprises polymerizing an olefin in the presence of: (a) a single-site or Ziegler-Natta olefin polymerization catalyst; (b) a low-temperature~~, platinum-group~~ dehydrogenation catalyst comprising a metal selected from the group consisting of platinum, palladium, rhodium, ruthenium, osmium, iridium, nickel, and rhenium; and (c) an optional hydrocarbon solvent, under conditions effective to promote:

(i) olefin polymerization;

(ii) catalytic dehydrogenation of the solvent and/or the resulting saturated oligomer or polymer chains to produce short and/or long-chain alkenes; and

(iii) copolymerization of additional olefin with the alkenes;

to produce a polyolefin having long-chain branching and/or a density less than about 0.96 g/cm^3.

3. (currently amended) The process of claim ~~2~~ 1 wherein the ~~transition metal is~~ dehydrogenation catalyst comprises iridium.

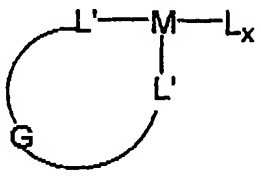
In the Specification:

Please replace the first paragraph on page 6 with the following amended paragraph:

The olefin polymerization catalyst can be any catalyst system that polymerizes olefins, including Ziegler-Natta or single-site catalysts. Preferably, the olefin polymerization catalyst is a single-site catalyst which comprises an activator and an organometallic complex, wherein the organometallic complex comprises a Group 3 to 10 transition metal and at least one polymerization-stable anionic ligand bonded to the transition metal. The polymerization-stable anionic ligand is preferably selected from the group consisting of cyclopentadienyl, indenyl, fluorenyl, and indenoindolyl ligands. More preferred complexes include a Group 4 transition metal such as titanium or zirconium. Preferably, the organometallic complex has open architecture. When the organometallic complex has open architecture, preferably it has the general structure:

Please insert the following two new paragraphs immediately below the structures on page 7:

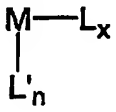
Preferably, the organometallic complex has the structure:



wherein M is a Group 3 to 10 transition metal; each L is independently selected from the group consisting of halide, alkoxy, aryloxy, siloxy, alkylamino, and C_1-C_{30} hydrocarbyl; each L' is independently selected from the group consisting of alkylamido, substituted or unsubstituted cyclopentadienyl, fluorenyl, indenyl, boraaryl, pyrrolyl, azaborolinyl, and indenoindolyl; G is a linking group and x satisfies the valence of M.

Preferably, G is a divalent radical selected from the group consisting of hydrocarbyl and heteroatom-containing alkylene radicals, diorganosilyl radicals, diorganogermanium radicals, and diorganotin radicals. Preferably, one L' is alkylamido and the other L' is selected from the group consisting of substituted or unsubstituted cyclopentadienyl, fluorenyl, indenyl, and indenoindolyl.

In another preferred aspect, the organometallic complex has the general structure:



wherein M is a Group 3 to 10 transition metal; each L is independently selected from the group consisting of halide, alkoxy, aryloxy, siloxy, alkylamino, and C_1-C_{30} hydrocarbyl; each L' is independently selected from the group consisting of alkylamido, substituted or unsubstituted cyclopentadienyl, fluorenyl, indenyl, boraaryl, azaborolinyl, and indenoindolyl; n is 1 or 2 and x satisfies the valence of M.

Please replace the paragraph bridging pages 7-8 with the following amended paragraph:

The activator helps to ionize the organometallic complex and activate the catalyst. Suitable activators are well known in the art. Examples include alumoxanes (methyl alumoxane (MAO), PMAO, ethyl alumoxane, diisobutyl alumoxane), alkylaluminum compounds (triethylaluminum, diethyl aluminum chloride, trimethylaluminum, triisobutyl aluminum), and the like. Suitable activators include acid salts that contain non-nucleophilic anions. These compounds generally consist of bulky ligands attached to boron or aluminum, and particularly include ionic borates and ionic aluminates. Examples include lithium tetrakis(pentafluorophenyl)borate, lithium tetrakis(pentafluorophenyl)-

aluminate, anilinium tetrakis(pentafluorophenyl)borate, trityl tetrakis-(pentafluorophenyl)borate, and the like. Suitable activators also include organoboranes, which include boron and one or more alkyl, aryl, or aralkyl groups. Suitable activators include substituted and unsubstituted trialkyl and triarylboranes such as tris(pentafluorophenyl)borane, triphenylborane, tri-n-octylborane, and the like. These and other suitable boron-containing activators are described in U.S. Pat. Nos. 5,153,157, 5,198,401, and 5,241,025, the teachings of which are incorporated herein by reference. Suitable activators also include aluminoboronates--reaction products of alkyl aluminum compounds and organoboronic acids--as described in U.S. Pat. Nos. 5,414,180 and 5,648,440, the teachings of which are incorporated herein by reference. Alumoxane activators, such as MAO, are preferred.

Please replace the first paragraph on page 9 with the following amended paragraph:

Preferred olefins for the polymerization are ethylene and C_3-C_{20} α-olefins such as propylene, 1-butene, 1-pentene, 1-hexene, 1-octene, and the like. Mixtures of olefins can be used. Ethylene and mixtures of ethylene with C_3-C_{10} α-olefins are especially preferred.

Please replace the third paragraph on page 9 with the following amended paragraph:

The polymerizations can be performed over a wide temperature range, such as about –30°C to about 280°C. A more preferred range is from about 30°C to about ~~180°C; most~~ 250°C, even more preferably from about 30°C to about 160°C. Most preferred is the range from about 60°C to about 100°C. Olefin partial pressures normally range from about 0.1 MPa to about 350 MPa. More preferred is the range from about 0.1 MPa to about 7 MPa.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art has established that transition metal pincer complexes are effective dehydrogenation catalysts for the conversion of alkanes to alkenes (C. Jensen, Chem. Commun. 1999). Also recognized is the usefulness of using a two-catalyst system for olefin copolymerization comprising a first catalyst for in-situ generation of comonomers and a second catalyst for copolymerization of the olefins with the comonomers (US 6,586,541). However, the prior art cited on this record has not disclosed a process of olefin copolymerization wherein polymerization occurs in the presence of a dehydrogenation catalyst producing alkene, and a copolymerization catalyst which produces copolymer from the olefin and the alkene produced by dehydrogenation.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Roberto Rábago
Primary Examiner
Art Unit 1713

RR
June 20, 2005

		Page 1 of 6
Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
RR	AA	6,294,495	09/25/01	Matsunaga	502	103	04/29/99
	AB	5,902,866	05/11/99	Nagy et al.	526	133	11/13/96
	AC	5,780,701	07/14/98	Kaska et al.	585	654	07/26/96
	AD	5,648,440	07/15/97	Sugano et al.	526	132	03/01/95
	AE	5,637,659	06/10/97	Krishnamurti et al.	526	133	05/17/96
	AF	5,539,124	07/23/96	Etherton et al.	548	402	12/19/94
	AG	5,414,180	05/09/95	Geerts et al.	585	525	07/14/93
	AH	5,241,025	08/31/93	Hlatky et al.	526	129	10/02/92
	AI	5,198,401	03/30/93	Turner et al.	502	155	07/30/91
	AJ	5,153,157	10/06/92	Hlatky et al.	502	117	03/20/90
RR	AK	5,064,802	11/12/91	Stevens et al.	502	155	07/03/90

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RR	AP	March, Advanced Organic Chemistry 3rd. ed. (1985) 1053.
RR	AQ	B. Weckhuysen et al., Catalysis Today 51, (1999) 223.
RR	AR	R. Crabtree et al., J. Am. Chem. Soc. 104, (1982) 107.

Examiner Robert Raha — Date Considered 6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

		Page 2 of 6
Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
RR	AA	3,903,191	09/02/75	Pollitzer	260	683.3	05/01/70
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RR	AP	M. Burk, et al., J. Am. Chem. Soc. 109, (1987) 8025.
RR	AQ	M. Burk, et al., J. Chem. Soc., Chem. Commun. (1985) 1829.
RR	AR	J. Belli, et al., Organometallics 15, (1996) 1532.

Examiner Roberto Rabago — Date Considered 6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

		Page 3 of 6
Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RR	AP	C. Moulton et al., J. Chem. Soc., Dalton Trans. (1976) 1020.
RR	AQ	M. Albrecht et al., Angew. Chem. Int. Ed. 40 (2001) 3751.
RR	AR	J. Singleton, Tetrahedron 59 (2003) 1837.

Examiner	Date Considered
Roberto Rabago	6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RR	AP	C. Jensen et al., Chem. Commun. (1997) 461.
RR	AQ	K. Krogh-Jespersen et al., J. Mol. Catal. A 189 (2002) 95.
RR	AR	C. Jensen, Chem. Commun. (1999) 2443.

Examiner Robert L. Richter	Date Considered 6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

		Page 5 of 6
Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RN	AP	M. Burk et al., Organometallics 3 (1984) 816.
RN	AQ	J. Maguire et al., J. Am. Chem. Soc. 113 (1991) 6706.
RN	AR	J. Miller et al., J. Chem. Soc. Chem. Commun. (1994) 1449.

Examiner Richard Raymond Date Considered 6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

		Page 6 of 6
Form PTO-1449 U.S. Department of Commerce Patent and Trademark Office Rev. 7/89	Attorney Docket: 88-2060A	Examiner: Unknown
	Serial No. 10/764,941	Filing Date: 01/26/04
LIST OF PRIOR ART CITED BY APPLICANT	Applicant: Sandor Nagy	Group Art: Unknown
	FOR: Olefin Polymerization In the Presence Of A Dehydrogenation Catalyst	Date: 04/22/04

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

			DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
	AL							
	AM							
	AN							
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

RR	AP	D. Baudry et al., J. Chem. Soc., Chem. Commun. (1983) 788.
RR	AQ	T. Sakakura et al., Chem. Letters (1988) 263.
RR	AR	M. Gupta et al., J. Am. Chem. Soc. 119 (1997) 840.

Examiner Roberto Rabago — Date Considered 6/20/05

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Notice of References Cited	Application/Control No. 10/764,941	Applicant(s)/Patent Under Reexamination NAGY, SANDOR	
	Examiner Roberto Rábago	Art Unit 1713	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,586,541 B2	07-2003	Citron, Joel David	526/113
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
X	U	C. Jensen, Chem. Commun. (1999) 2443-2449.
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

or Fax **(703) 746-4000**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

24114 7590 06/27/2005

LYONDELL CHEMICAL COMPANY
3801 WEST CHESTER PIKE
NEWTOWN SQUARE, PA 19073

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,941	01/26/2004	Sandor Nagy	88-2060A	9300

TITLE OF INVENTION: OLEFIN POLYMERIZATION IN THE PRESENCE OF A DEHYDROGENATION CATALYST

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1400	$300	$1700	09/27/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
RABAGO, ROBERTO	1713	526-115000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are enclosed:

☐ Issue Fee

☐ Publication Fee (No small entity discount permitted)

☐ Advance Order - # of Copies _____

4b. Payment of Fee(s):

☐ A check in the amount of the fee(s) is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.
NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,941	01/26/2004	Sandor Nagy	88-2060A	9300

24114 7590 06/27/2005

LYONDELL CHEMICAL COMPANY
3801 WEST CHESTER PIKE
NEWTOWN SQUARE, PA 19073

EXAMINER	
RABAGO, ROBERTO	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 06/27/2005

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 93 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 93 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

PTOL-85 (Rev. 12/04) Approved for use through 04/30/2007.